



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.         | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------------|------------------|
| 10/036,809  | 12/31/2001  | Ge Nong              | 01-HK-048<br>(STM101-01048) | 5323             |
| 7590 03/27/2006   |             |                      | EXAMINER                    |                  |
| Lisa K. Jorgenson<br>STMicroelectronics, Inc.<br>1310 Electronics Drive<br>Carrollton, TX 75006 |             |                      | MURPHY, RHONDA L            |                  |
|   |             |                      | ART UNIT                    | PAPER NUMBER     |
|   |             |                      | 2616                        |                  |

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/036,809

Applicant(s)

NONG, GE

Examiner

Rhonda Murphy

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on the amendment filed 1/3/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This communication is responsive to the amendment filed on 1/3/06. Accordingly, claims 1-20 are currently pending in this application.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1- 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krishna et al. (US 6,563,837).

**Regarding claims 1 and 4**, Krishna teaches a switch fabric (Fig. 1; network device 49) comprising: N input buffers (queues 56, 57, 58) capable of receiving incoming fixed-size data packets at a first data rate and outputting said fixed-size data packets at a second data rate equal to at least twice said first data rate (col. 8, lines 34-38); N output buffers (queues 65) capable of receiving fixed-size data packets at said second data rate (col. 8, lines 10-15, 34-38); and a bufferless, non-blocking interconnecting network (Fig. 1, col. 3, lines 63-65; col. 6, lines 60-61; channels 80 – 88 form crossbar 89, which does not include any buffers) capable of receiving from said N input buffers said fixed-size data packets at said second data rate and transferring said fixed-size data packets to said N output buffers at said second data rate (col. 8, lines 10-15, 34-38).

Krishna fails to explicitly disclose outputting said fixed-size data packets at said first data rate. However, Krishna discloses inputting packets at a certain data rate (col. 8, lines 34-35) and unloading packets onto output data links according to the speed of those output data links (col. 8, lines 10-15). It is known in the art that packets are input and output at the same data rate.

Thus, it would have been obvious to one skilled in the art to realize the output data links output packets at the first data rate, since packets are input and output at the same data rate.

**Regarding claims 2 and 5**, Krishna teaches a bufferless, non-blocking interconnecting network, comprising a bufferless crossbar (Fig. 1, col. 3, lines 63-65; col. 6, lines 60-61; channels 80 – 88 form crossbar 89, which does not include any buffers).

**Regarding claims 3 and 6**, Krishna teaches each of said N input buffers is at least twice the size of each of said N output buffers (see Fig. 1).

**Regarding claims 7 and 14**, Krishna teaches a plurality of fixed-size data packet switches (all elements of Fig. 1, col. 7, lines 35-36), at least one of said fixed-size data packet switches comprising: N input ports capable of receiving incoming fixed-size data packets at a first data rate and outputting said fixed-size data packets at said first data rate (Fig. 1, ports 50, 51, 52; col. 8, lines 34-38); N output ports capable of receiving fixed-size data packets at said first data rate (ports 59, 60, 61; col. 8, lines 10-15 ); and a switch fabric (network device 49; col. 6, lines 60-61) interconnecting said N input ports and said N output ports comprising: N input buffers (queues 56, 57, 58) capable of receiving incoming fixed-size data packets at a first data rate and outputting said fixed-

Art Unit: 2667

size data packets at a second data rate equal to at least twice said first data rate (col. 8, lines 34-38); N output buffers (queues 65) capable of receiving fixed-size data packets at said second data rate (col. 8, lines 10-15, 34-38); and a bufferless, non-blocking interconnecting network (Fig. 1, col. 3, lines 63-65; col. 6, lines 60-61; channels 80 – 88 form crossbar 89, which does not include any buffers) capable of receiving from said N input buffers said fixed-size data packets at said second data rate and transferring said fixed-size data packets to said N output buffers at said second data rate (col. 8, lines 10-15, 34-38).

Krishna fails to explicitly disclose outputting said fixed-size data packets at said first data rate. However, Krishna discloses inputting packets at a certain data rate (col. 8, lines 34-35) and unloading packets onto output data links according to the speed of those output data links (col. 8, lines 10-15). It is known in the art that packets are input and output at the same data rate.

Thus, it would have been obvious to one skilled in the art to realize the output data links output packets at the first data rate, since packets are input and output at the same data rate.

**Regarding claims 8 and 15**, Krishna teaches a bufferless, non-blocking interconnecting network comprising a bufferless crossbar (Fig. 1, col. 3, lines 63-65; col. 6, lines 60-61; channels 80 – 88 form crossbar 89, which does not include any buffers).

**Regarding claims 9 and 16**, Krishna teaches each of said N input buffers is at least twice the size of each of said N output buffers (see Fig. 1).

Art Unit: 2667

**Regarding claims 10 and 17**, Krishna teaches a scheduling controller capable of scheduling transfer of said fixed-size data packets from said N input ports to said switch fabric (arbiter 90; col. 8, lines 24-38).

**Regarding claims 11 and 18**, Krishna teaches a scheduling controller capable of scheduling transfer of said fixed-size data packets from said N output ports to an external device (col. 8, lines 5-15; 24-38).

**Regarding claims 12 and 19**, Krishna teaches a scheduling controller capable of scheduling transfer of said fixed-size data packets from said N input buffers to said bufferless, non-blocking interconnecting network (col. 8, lines 5-15; 24-38).

**Regarding claims 13 and 20**, Krishna teaches a scheduling controller capable of scheduling transfer of said fixed-size data packets from said N output buffers to said N output ports (col. 8, lines 5-15; 24-38).

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 8:00 - 4:30pm.

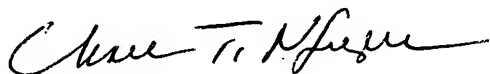
Art Unit: 2667

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rhonda Murphy  
Examiner  
Art Unit 2667

RM



CHAU NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600